

Serial No.: 10/719,999
Response to April 6, 2006 Final Office Action

1890-0011

REMARKS

I. Status of the Application

Claims 1-11, 13, 14 and 23-31 are pending in this application. Claims 12 and 15-22 have been cancelled. In the April 6, 2006 final office action, the Examiner rejected claims 1-11, 13, 14 and 23-31 under 35 U.S.C. § 103(a) as allegedly being obvious over U.S. Patent No. 6,772,512 to Tsai (hereinafter "Tsai") or U.S. Patent No. 4,881,885 to Kovac et al. (hereinafter "Kovac") in view of U.S. Patent No. 5,763,952 to Lynch et al. (hereinafter "Lynch").

In this response, applicant respectfully traverses the rejection of the pending claims and requests reconsideration of the pending claims in view of the following remarks.

II. Claims 1 and 23 are Patentable Over Tsai or Kovac in View of Lynch

In the April 6, 2006 office action, the Examiner rejected claims 1 and 23 as allegedly being obvious over either Tsai or Kovac in view of Lynch. Applicant respectfully submits that the Examiner's rejection of claims 1 and 23 is improper as the Examiner has not made a *prima facie* case of obviousness.

In order to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to combine the reference teachings. MPEP § 2143. A motivation to combine references is required to "prevent the use of hindsight based on the invention to defeat patentability of the invention." See In re Rouffet, 149 F.3d 1350 (Fed. Cir. 1998). **"If [the] proposed modification [by the examiner] would render the prior art invention being**

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modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” MPEP § 2143.01 (citing *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)). Furthermore, **the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.**” MPEP § 2143.01 (citing *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990)).

A. **The Examiner’s Stated Motivation for Combining the References**

In the present case, the Examiner has rejected claims 1 and 23 as allegedly being obvious over either Tsai or Kovac in view of Lynch. In making this rejection in the April 6, 2006 Office action, the Examiner noted that neither Tsai nor Kovac teach the limitation of “at least one wire connected to the chip and extending through the bond opening and the bonding channel.” However, the examiner cited Lynch, col. 10, lines 8-29 as describing “leads 312, 314 and 316 with portions thereof extending through [a] slit 326 and connected to [a] chip through TAB bonding, to form well supported leads and selected external portions of selected lead traces can be connected to external ground or power and the beneficial electrical characteristics discussed above accrue to a flexible, tape mounted semiconductor assembly.”

After noting the above disclosure in Lynch, the Examiner concluded that “it would have been obvious to one of ordinary skill in the art at the time of the invention to include Lynch’s at least one wire connected to the chip and extending through the bond opening and the bond channel in Kovac’s device.” The Examiner cited the motivation to combine Kovac and Lynch to be twofold, including (i) “form[ing] well supported leads (Lynch col. 2, lines 10-

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15);” and (ii) “[connecting] selected external portions of selected lead traces ... to external ground or power and the beneficial electrical characteristics discussed above accrue to a flexible, tape mounted semiconductor assembly ... (Lynch col. 5, lines 11-31).”

While the Examiner stated the above motivation for combining Kovac and Lynch, the examiner stated no motivation for combining Tsai and Lynch. Notwithstanding this fact, Applicant makes arguments below based on the assumption that the Examiner would use the same motivation to combine Tsai and Lynch.

B. Kovac in View of Lynch

It is respectfully submitted that the Examiner’s proposed motivation for combining Kovac and Lynch is improper because the proposed modification would render the prior art invention being modified “unsatisfactory for its intended purpose.” See MPEP § 2143.01. In particular, a person skilled in the art would not consider providing bond wires extending through openings or channels within the block 12 of Kovac, because the chip is removed from the block upon applying the resin cap thereto. Accordingly, passing bond wires through the vacuum port 16 or any other channel within the block 12 does not make sense, and could easily render the prior art unsatisfactory for its intended purpose.

Applicant respectfully notes that “the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.” MPEP § 2143.01 (*citing In re Mills*, 916 F2d 680 (Fed. Cir. 1990)). Based on the rationale stated by the Examiner for combining Kovac and Lynch, and based on the above described result of such a combination as set forth in the preceding

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paragraph, the combination of Kovac and Lynch would not be desirable, and is thus improper. Again, the mere fact that Kovac and Lynch could be combined does not render the combination obvious. In fact, the proposed combination would not be desirable, and the Examiner's rejection should be withdrawn.

As set forth above, because there is no suggestion that a combination of Kovac and Lynch would be desirable, and because such a combination would render the prior art unsatisfactory for its intended purpose, it is respectfully submitted that the Examiner's proposed motivation for combining Kovac and Lynch is improper under MPEP § 2143.01. Accordingly, the Examiner's rejection of claims 1 and 23 should be withdrawn.

C. Tsai in View of Lynch

In the April 6, 2006 Office action, the examiner rejected claims 1 and 23 under 35 USC § 103 as being rejected over Tsai or Kovac in view of Lynch. Accordingly, the Examiner's rejection appears to be that claims 1 and 23 are obvious over (i) Tsai in view of Lynch, or (ii) Kovac in view of Lynch. As set forth above, the Examiner stated a motivation for combining Kovac and Lynch, but failed to specifically state a motivation for combining Tsai and Lynch. Accordingly, the Examiner has failed to make a *prima facie* case of obviousness for combining Tsai and Lynch. "When the motivation to combine the teachings of the references is not immediately apparent, it is the duty of the examiner to explain why the combination of the teachings is proper." MPEP § 2142. Because the Examiner has not provided any motivation or suggestion in the references that would suggest a combination of the references, it is respectfully submitted that the examiner has not made a *prima facie* case

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of obviousness, and the rejection of claims 1 and 23 over Tsai in view of Lynch should be withdrawn.

Notwithstanding the foregoing, even if the event the Examiner's motivation for combining Tsai and Lynch is the same as that stated for combining Kovac and Lynch, Applicant respectfully submits that such motivation is improper. In particular, Tsai relates to a flip-chip ball-grid-array in which electrical connections to a semiconductor chip 220 are implemented via solder balls 221. Because of this arrangement, there is no motivation for providing bond wires that extend through the opening 211. Moreover, the provision of bond wires extending through the vent hole is prevented by the structure of Tsai. Specifically, the lower support plate shown in Fig. 2B of Tsai (no reference numeral) must be provided adjacent to the lower surface of the solder mask 240 and the elevated flat surface 241 to prevent encapsulating material 250 from reaching the pad 230. With this arrangement, there is no space left for bond wires, and including space for bond wires would prevent the encapsulating material 250 from reaching the pad 230. Thus, the modifications proposed by the Examiner would render the prior art being modified unsatisfactory for its intended purpose (see MPEP § 2143.01). Accordingly, there is no suggestion or motivation to make the proposed modification, and the Examiner's rejection of claims 1 and 23 should be withdrawn.

D. Conclusion as to Claims 1 and 23

For at least the reasons discussed above, as well as others, it is respectfully submitted

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that the obviousness rejection of claims 1 and 23 over Tsai or Kovac in view of Lynch should be withdrawn.

III. Claims 2-11, 13, 14 and 24-31

Claims 2-11, 13, 14 and 24-31 also stand rejected as allegedly being obvious over Tsai or Kovac in view of Lynch. Claims 2-11, 13, 14 and 24-31 depend from and incorporate all of the limitations of either claim 1 or claim 23. Accordingly, for at least the same reasons as those set forth above in connection with claim 1 and claim 23, it is respectfully submitted that the rejection of claims 2-11, 13, 14 and 24-31 over Tsai, Kovac and Lynch should be withdrawn.

IV. Conclusion

For all of the foregoing reasons, it is respectfully submitted the applicants have made a patentable contribution to the art. Favorable reconsideration and allowance of this application is, therefore, respectfully requested.

Respectfully submitted,



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